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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,969	04/11/2001	Kazuhiro Ohnishi	5000.40010X00	8254

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EXAMINER

TRAN, MAI HUONG C

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 04/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/829,969

Applicant(s)

OHNISHI ET AL.

Examiner

Mai-Huong Tran

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restriction

Application's election without traverse of Group I (Claims 1-8) in Paper No. 7 drawn to a semiconductor device is acknowledged for prosecution in the subject application. Accordingly, claims 9-16 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03. Applicants have the right to file a divisional application covering the subject matter of the non-elected claims.

Specification

The specification is objected to for the following reasons.

Since the application's election drawn to a semiconductor device, the title of the invention is no longer descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed (see MPEP § 606.01).

Typo has been found on page 6, line 22 (layre). Correction is required.

The specification includes incorrect figure number on page 11, line 16. It should be "Fig. 1C" instead of "Fig. 12". Correction is required.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-3, 6, and 7 are rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,291,868 to Weimer et al.

Regarding to claim 1, Weimer discloses a semiconductor device with an MOS transistor, where the gate electrode of the MOS transistor is in a stacked structure comprising a silicon layer 104, a metal silicide layer 102, a reaction barrier layer 100 and a metallic layer 116 formed in this order from the bottom upwards as set forth in col. 2, lines 56-67, col. 3, lines 1-64, and fig. 1.

Regarding to claims 2 and 6, a semiconductor device, wherein the silicon layer is doped with an impurity of any desired conductor type (col. 2, lines 65-67).

Regarding to claims 3 and 7, a semiconductor device, wherein the metal silicide layer has a thickness of 5 to 20 nm (col. 4, lines 15 and 16).

Claim 5 is rejected under 35 U. S. C. § 102 (e) as being anticipated by U.S. Patent No. 6,291,868 to Weimer et al.

Regarding to claim 5, Weimer discloses a semiconductor device with an MOS transistor whose gate electrode is in a stacked structure comprising a silicon layer 104 and a metallic layer 116 as an uppermost layer provided on the silicon layer 104, wherein a metal silicide layer 102 is provided on the silicon layer side 104 and a reaction barrier layer 100 is provided under the metallic layer side 116 between the silicon layer 103 and the metallic layer 116 (col. 2, lines 56-67, col. 3, lines 1-64, and fig. 1).

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 8 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,291,868 to Weimer et al. in view of the remark.

Regarding to these claims, Weimer discloses the claimed invention except for the reaction barrier layer is a tungsten nitride layer, and the metallic layer is a tungsten layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the reaction barrier layer is a tungsten nitride layer, and the metallic layer is a tungsten layer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Conclusion

Any inquiry concerning this communication on earlier communications from the examiner should be directed to Mai-Huong Tran, (703) 305-1958. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 PM. The examiner's supervisor, David Nelms can be reached on (703) 308-4910.

The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mai-Huong Tran

HMT
Huai V. Ho
Primary Examiner
Art Unit 2818